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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,717	10/31/2003	Krzysztof Nauka	5649-2234	1558

20792 7590 01/03/2008  
MYERS BIGEL SIBLEY & SAJOVEC  
PO BOX 37428  
RALEIGH, NC 27627

EXAMINER
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PHAM, VAN T

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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01/03/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

### Application No.

10/698,717

### Applicant(s)

NAUKA ET AL.

### Examiner

VAN T. PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9, 11 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 28 is/are allowed.
- 6) ☒ Claim(s) 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### *Response to Arguments*

1. Applicant's arguments filed 11/29/2007 have been fully considered but they are not persuasive.

Claim 11: Applicant's asserted, "Amended independent claim 28 includes similar recitations. Specifically, Cho does not disclose or suggest *using the probe to sense changes in leakage current at the junction between the semiconductor portion and the ferroelectric layer*. For example, Figure 1 of Cho shows that the probe 11 is used to determine the capacitance of the ferroelectric material 17, and does not measure leakage current at the junction of the electrode and substrate 15. In fact, Figure 1 of Cho does not even appear to show a junction between the ferroelectric material 17 and the substrate 15. To the contrary, the electrode 16 separates the ferroelectric material 17 from the substrate 15. Accordingly, probe 11 of Figure 1 of Cho does not appear capable of measuring a leakage current between these two layers as these two layers do not form a junction and the probe is configured to measure capacitance, not leakage current. Accordingly, independent Claims 11 and 28 are patentable over Cho for at least the reasons described herein", which is partially correct. Claim 11 recites "a read circuit for **using the probe to sense changes in capacitance or leakage current of the electrical junction between the semiconductor portion and the poled ferroelectric layer**", which Cho discloses "a read circuit for using the probe to sense changes in capacitance of the electrical junction between the semiconductor portion and the poled ferroelectric layer", as Applicant's admitted above. However, claim 28 does not recite that Moreover, Cho discloses a electrode layer 16 in between layer 15 and 17 because (see Cho [0060]) "The electrode 16 is intended to generate an electric field between the electrode 16 and the probe of a recording/reproducing head and applies to the ferroelectric material 17 an electric field stronger than the coercive electric field thereof to

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determine the polarization direction". Therefore, Cho discloses a junction between the ferroelectric material 17 and the substrate 15.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Cho et al. (US 2004/0090903).

Regarding claim 11, Cho et al. discloses a data storage device comprising

a conductive probe having a tip (see Fig. 1, element 11);

a substrate including a semiconductor portion (see Fig. 1, elements 15-16 and [0060]);

a data storage medium including a layer of poled ferroelectric material for storing data, the poled ferroelectric layer on the substrate, between the tip and the substrate, the semiconductor portion and the poled ferroelectric layer forming an electrical junction (see Fig. 1, tip 11, ferroelectric layer 17, semiconductor layer 15, electrode layer 16, and see ); and

a read circuit for using the probe to sense changes in capacitance or leakage current of the electrical junction between the semiconductor portion and the poled ferroelectric layer (see abstract and Fig. 1, [0008]).

***Allowable Subject Matter***

4. Claims 9 and 28 allowed.

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Cited References***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited references relate to dielectric recording apparatus dielectric reproducing apparatus.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN T. PHAM whose telephone number is 571-272-7590. The examiner can normally be reached on Monday-Thursday from 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP

  
THANG V. TRAN  
PRIMARY EXAMINER